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EXAMINER	
NGUYEN, VAN H	

ART UNIT	PAPER NUMBER
2194	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/819,782	GOODING, THOMAS MICHAEL	
	Examiner	Art Unit	
	VAN H. NGUYEN	2194	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 March 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-46 are presented for examination.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 12, 13, 22-26, 28-32, 34-36, and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Wang et al.** (U.S. 6, 708,223 B1).

4. **As to claim 12:**

a. Wang teaches the invention substantially as claimed a method for transparently executing function calls *(e.g., RPC; col.2, lines 32-33)* from a local node *(e.g., client computer 70; fig. 2)* on a remote node *(e.g., server computer 72; fig. 2),* comprising:

(i) determining a remote node to execute a function call *(e.g., client computer 70 sends request to server computer 71; fig. 8);*

(ii) calling a function configured to generate a flattened pure value buffer containing parametric function-related data *(e.g., the proxy marshals the call parameters into an RPC buffer; col.2, lines 44-46 and fig. 2);*

(iii) transmitting the flattened pure value buffer from the local node to the remote node *(e.g., they are transferred across the network to the stub; col. 2, lines 44-46 and fig. 2)*;

(iv) executing the function call on the remote node *(e.g., the stub unmarshals the call parameters, and calls the server object directly; col. 2, lines 47-48 and figs. 2&8)*; and

(v) transmitting results of the function call to the local node *(e.g., the stub marshals the call results into an RPC buffer for transmission across the network to the proxy unmarshals the results and returns them to the client process; col. 2, lines 48-51 and figs. 2 &8).*

b. While Wang teaches calling a function configured to generate a flattened pure value buffer containing parametric function-related data, Wang does not specifically teach *"a route function"*.

c. It would have been obvious to one of ordinary skill in the art to have applied the teachings of Wang to include *"a route function"* because it would have provided a the capability for maximizing the efficiency of RPC flow control and more efficiently binding between the client and the server.

d. The fact that Wang's teachings *"the proxy acts as a local version of the server object which the client can call...the proxy and the stub then communicate with one another across the network; col.2, lines 40-44 and fig. 2)* and the communication between the proxy (in the client) and the stub (in the server) in Wang suggests *"a route function"*.

5. **As to claim 13:**

Wang teaches reading a parameter associated with the function call, wherein the parameter indicates the remote node for execution of the function call *(e.g., marshals data 144 by reading parameters; col.8, lines 43-45).*

6. **As to claim 22:**

Wang teaches unflattering the results *(col.2, lines 48-51).*

7. **As to claim 23:**

Wang teaches queuing at least one of pre-flattened commands and flattened commands prior to transmission to the remote node; and cooperatively executing the queued commands in a single network transaction *(see fig. 4A and the associated text).*

8. **As to claim 24:**

Note the rejection of claim 12 above. Claim 24 is the same as claim 12, except claim 24 is a computer readable medium claim and claim 12 is a method claim.

9. **As to claim 25:**

Wang teaches generating a parameter representative of the parametric function-related data; and packing the parametric function-related data and the generated parameter for transmission to the remote node *(col. 7, lines 44-58).*

10. **As to claim 26:**

Wang teaches the parameter representative of the parametric function-related data further comprise a text string, wherein each character in the text string corresponds to a particular data type *(col.8, lines 47-62).*

11. **As to claim 28:**

Refer to claim 13 above for rejection.

12. **As to claim 29:**

Wang teaches flattening each variable argument indicated in the function into the pure value buffer *(fig. 3A and the associated text)*. Refer to claim 12 above for rejection of "the route function".

13. **As to claim 30:**

Wang teaches receiving the parametric function and the related data on the remote node; unpackaging the parametric function related-data on the remote node; computing the function on the remote node; and packaging a function reply *(col.2, lines 46-52)*.

14. **As to claim 31:**

Wang teaches flattening the reply *(col.2, lines 48-49; figs. 2 &7)*.

15. **As to claim 32:**

Wang teaches unflattering the function related-data *(col.2, lines 47-48)*.

16. **As to claim 34:**

Refer to claim 23 above for rejection.

17. **As to claim 35:**

Note the rejection of claim 12 above. Claim 35 is the same as claim 12, except claim 35 is a computer readable medium claim and claim 12 is a method claim.

18. **As to claim 36:**

Refer to claim 13 above for rejection.

19. **As to claim 45:**

Refer to claim 22 above for rejection.

20. Claims 20, 21, 27, 33, 43, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Wang et al.** in view of **Pettus** (U.S.6,223,217 B1).

21. **As to claim 20:**

a. Wang does not specifically teach the use of a cache memory.

b. Pettus teaches the use of a cache memory *(e.g., the cache memory;col.14, lines 44-58).*

c. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Pettus with Wang because Wang's teaching would have provided the capability for dramatically improving the performance of the system, because cache memory is always faster than main RAM memory.

22. **As to claim 21:**

Wang does not specifically teach the use of a cache memory. Refer to discussion of claim 20 above for rejection of the use of a cache memory.

23. **As to claim 27:**

Refer to claim 20 above for rejection.

24. **As to claim 33:**

a. Wang teaches receiving the transmitted results of the function on the local node *(col.2, lines 48-51).*

b. Wang does not specifically teach the use of a cache memory.

c. Refer to discussion of claim 20 above for rejection of the use of a cache memory.

25. **As to claims 43 and 44:**

Refer to claims 20 and 21 above for rejection.

26. Claims 1-9 and 11, 14-19, and 37-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Wang et al.** in view of **Shakib** (U.S.6,321,274 B1).

27. **As to claim 1:**

a. The rejection of claim 12 above is incorporated herein in full.

b. Wang, however, does not explicitly teach the use of a bundle.

c. Shakib teaches the use of a bundle *(e.g., bundles the RPCs before sending them to the server process; col.3, lines 45-49).*

d. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Shakib with Wang because Shakib's teaching would have provided the capability for reducing the number of requests transmitted from the client to the server. This reduction provides increased throughput for the client by eliminating delays associated with transmission of calls for which no response (or no immediate response) is necessary.

28. **As to claim 2:**

Wang teaches a DTSTRUCT *(col.8, lines 47-52).*

29. **As to claim 3:**

Wang teaches a data only buffer *(123; fig. 3A)*.

30. **As to claim 4:**

a. Wang does not specifically teach the use of a cache memory.

b. Pettus teaches the use of a cache memory *(e.g., the cache memory;col.14, lines 44-58)*.

c. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Pettus with Wang because Wang's teaching would have provided the capability for dramatically improving the performance of the system, because cache memory is always faster than main RAM memory.

31. **As to claim 5:**

Refer to claim 13 above for rejection.

32. **As to claim 6:**

Refer to claim 29 above for rejection.

33. **As to claim 7:**

a. Shakib teaches receiving the bundle on the remote node; unpackaging the bundle on the remote node; computing the function on the remote node; and packaging a function reply *(see fig.5 and associated text)*.

b. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Shakib with Wang because Shakib's teaching would have provided the capability for reducing the number of

requests transmitted from the client to the server. This reduction provides increased throughput for the client by eliminating delays associated with transmission of calls for which no response (or no immediate response) is necessary.

34. **As to claim 8:**

Wang teaches flattening the function reply (col.2, line 48-51).

35 **As to claim 9:**

Shakib teaches flattening the bundle (e.g., unbundled call 540, 550; fig. 5).

36. **As to claim 11:**

Refer to claim 23 above for rejection.

37. **As to claim 14:**

a. Wang teaches generating a text string, wherein each element of the text string identifies the data type of a portion of the parametric function-related data (col.8, lines 48-55).

b. Note claim 1 above bundling the parametric function-related data.

38. **As to claim 15:**

Refer to claim 2 above for rejection.

39. **As to claim 16:**

Wang teaches flattening the parametric function-related data *(col.2, lines 44-46).*

40. **As to claim 17:**

Refer to claim 7 above for rejection.

41. **As to claim 18:**

Wang teaches unflattening *(e.g., unmarshaling; col.2, lines 47-48)* and flattening *(e.g., marshalling; col.2, lines 44-45).*

42. **As to claim 19:**

Wang teaches looking up a function pointer that indicates the location of the function of the function call to the remote node *(125; fig. 3A).*

43. **As to claims 37-42:**

Refer to claims 14-19 above for rejection.

44 Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Wang et al.** in view of **Shakib** as applied to claims 1, 7, and 8 above and further in view of **Pettus** (U.S.6,223,217 B1).

45. **As to claim 10:**

a. Wang teaches receiving the transmitted results of the function on the local node *(col.2, lines 48-51).*

b. The combination of Wang and Shakib does not specifically teach the use of a cache memory.

c. Pettus teaches teach the use of a cache memory (col.14, lines 47-58).

d. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Pettus with Wang as modified by Shakib because Pettus's teaching would have provided the capability for

dramatically improving the performance of the system, because cache memory is always faster than main RAM memory.

Response to Arguments

46. Applicant's arguments filed March 21, 2005 have been fully considered but they are not persuasive.

47. In the remarks, Applicant argued in substance that (a) Wang fails to disclose generating a flattened pure buffer; (b) by disclosing including only pointers Wang teaches away... generating a flattened pure value buffer that contains purely data values; (c) by reducing an entire claim limitation down to a single word (bundle) the Examiner improperly disregards the patentable weight of the other relevant recitations in the claim.

48. Examiner respectfully traverses Applicant's remarks.

(i) As to point (a), Wang's teaching "marshals the call parameters into an RPC buffer" (col.2, lines 44-46) meets "generating a flattened pure buffer" as claimed by Applicant.

(ii) As to point (b), contrary to Applicant's contention, Wang's buffer does include data "the RPC buffer for holding all marshaled data...it copies any immediate data in the parameter set 125 into the buffer" (col.8, lines 58-62).

(iii) As to point (c), Shakib is combined with Wang to teach a technique for "bundling requests." Shakib's teaching " bundles the RPCs before sending them to the

server process" could be applied for bundling "the parametric function-related data and the pure value buffer" as claimed by Applicant to reduce the number of requests transmitted from the client to the server.

Conclusion

49. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Webb (US 6842786) teaches serializes or flattens a specified data value or values into a platform-independent data package or stream

- Lim et al. (US 6044409) teaches Framework for marshaling and unmarshaling argument object references.

- Goldsmith et al. (US 5491800) teaches flattening/unflattening parameters.

50. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

51. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the

advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

52. Any inquiry or a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: (571) 272-2100.

53. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VAN H. NGUYEN whose telephone number is (571) 272-3765. The examiner can normally be reached on Monday-Thursday from 8:30AM - 6:00PM. The examiner can also be reached on alternative Friday.

54. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Meng-Ai An can be reached on (571) 272-3756.

55. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

56. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any response to this action should be mailed to:
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